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A.S.M.E. AFFAIRS

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New Committee Appointments

Secretary's Letter

For variety of professional session, eminence of persons attending, and opportunity, under delightful circumstances, for renewing and extending acquaintances, the 1920 Annual Meeting by common consent excelled all previous gatherings of the Society.

Indeed, so great has become the attendance with the increasing interest, that it has been found necessary with the mounting costs to ask the members to pay a small fee for their guests. But even with this charge, to which I am able to report no objection has yet been made, the registration, nearly 2200, exceeded that of previous years.

Praise for the conduct and interest of the meeting has been universal and many oral and written messages have been received, one outstanding expression of approval being from a Past-President who writes as follows:

Permit me to add a word of congratulation for the admirably efficient way in which everything went off pertaining to the recent Annual Meeting. In many years of attendance on such functions of various societies I have never taken part in a meeting that was so full of interest or in which all interests had so much to satisfy them. Also, I am delighted with the spirit of service to the distant member which plainly permeates the Society's Monthly Journal.

It has been the constant effort of the officers of The American Society of Mechanical Engineers, and ever since your Secretary has been connected with the Society—first as a member of the Meetings and Program Committee, and then later when asked to become Secretary—to put themselves out to serve the distant member, to make it really a national society. The Sections movement, both geographical and professional, the Library service, the employment service, the Engineering Index, the Survey of Engineering Progress, etc., are all concrete evidences of a devotion to the national interests of the profession. At the same time the individual personal wants of any member, no matter where he may be located, are most solicitously cared for.

Nothing could give greater satisfaction to the members of the numerous committees who contributed to the above result than to know that their efforts are recognized and appreciated, and the foregoing comment by one of the most acute observers in the Society, one who has been around the world and in every corner of this continent time and again, is the most satisfying commendation possible.

CALVIN W. RICE,
Secretary.

Fortieth Anniversary Addresses

The speeches made in New York on the occasion of the celebration of the Fortieth Anniversary of the Society on November 5, 1920, together with letters of congratulation received, are being published in a small pamphlet for limited distribution, and any member who desires a copy should request one of the Secretary.

The new appointments on the Standing Committees of Administration are announced in the Council notes for the December 10th meeting on page 19 of this issue.

Theodore H. Hinchman, appointed on the Finance Committee, has been a member of the Society since 1895. He was at one time associated with Past-President M. E. Cooley and is now partner in the firm of Smith, Hinchman and Grylls, consulting engineers, of Detroit. Mr. Hinchman was elected by the Local Sections to be a member of the Regular Nominating Committee two years ago.

Luther B. McMillan, reappointed on the Committee on Meetings and Program, on which he has been serving a few months to fill a vacancy, is consulting engineer in the power-plant department of the H. W. Johns-Manville Company. He was formerly instructor in steam and gas engineering at the University of Wisconsin, in which capacity he read an important paper before the Society on the heat-insulating properties of materials. Mr. McMillan has also been active in the Metropolitan Section.

John T. Wilkin, new appointee on the Publication and Papers Committee, receives his first committee assignment. He is president and mechanical engineer of the Connersville Blower Company, Connersville, Ind., with which company he has been connected since 1886. He was elected a member of the Society in 1898.

Arthur M. Greene, Jr., has accepted the chairmanship of the Research Committee for another year. In this capacity Professor Greene has made notable contributions to the literature of the Society in the Engineering Research Section published each month in MECHANICAL ENGINEERING, and it is a source of gratification that he will continue to give his personal time and attention to this work for 1921.

Society Will Inaugurate Awards

Following the adoption by the Society at the Annual Business Meeting of the report of the Committee on Awards and Prizes, the Council will immediately put into effect as many of the provisions as are possible under the present financial conditions.

The first new award to be made will be that of *Life Membership* for the best contribution to the literature of mechanical engineering appearing in the Society's publications for the calendar year 1920. It is hoped that the Committee on Awards will be able to report in time for the result to be announced at the Spring Meeting in Chicago in May.

Regarding the new *A.S.M.E. Medal*, to be awarded for a notable invention, a Special Committee is already working to procure an appropriate design.

The *Honorable Mention* to be awarded for inventions or improvements in engineering can be inaugurated as soon as any members

of the Society present names. Any members of the Society may submit to the Council a full statement of claims for recognition of any one who in their opinion has made an invention or improvement in engineering which merits the attention of the Society.

The *Junior and Student Prizes* for the best papers by Junior Members and by enrolled members of Student Branches, respectively, will be awarded as in previous years.

The complete report of the Committee on Awards and Prizes was published in the October 1919 issue of *MECHANICAL ENGINEERING*, and any members of the Society who are interested should consult this report or may write the Secretary.

Professional Sections Notes

A meeting of the Standing Committee on Professional Sections was held on December 21, and a schedule was drawn up for future meetings of the Standing Committee, as follows: The fourth Friday prior to the Annual and Spring Meetings of the Society and the first Friday subsequent to the Annual and Spring Meetings.

Until the Professional Sections are all functioning, special meetings of the Standing Committee will be held if necessary.

Reports from the several sections were received, of which the following are outstanding items.

The Executive Committee of the *Fuels Section* is contemplating a sub-committee on fuels in every Local Section.

Prof. L. P. Breckenridge, Chairman of the Fuels Section, proposes an A.S.M.E. Code for the Conservation of Fuel, to be issued in card form and hung up in every boiler room, house-heating plant and kitchen in the United States.

The *Management Section* has appointed a joint Committee on Nomenclature of Management with the Society of Industrial Engineers, the Taylor Society, the Industrial Relations Association of America, and the National Association of Cost Accountants. The personnel of this Committee is:

Representing Management Section A.S.M.E.:

F. E. TOWN, Chairman,
WALLACE CLARK,
W. D. HAMMERLY (Alternate).

Representing Society of Industrial Engineers:

HARRY A. HOPF,
CHARLES E. FUNK.

Representing Taylor Society:

W. O. LICHTNER,
ROBERT T. KENT,
HENRY WOOD SHELTON (Alternate).

Representing Industrial Relations Association of America:

C. S. CHING,
W. H. WINANS,
MARK M. JONES (Alternate).

Representing National Association of Cost Accountants:

J. P. JORDAN,
DURWARD E. BURCHELL,
C. L. JAMISON (Alternate).

The Committee held its organization meeting in the rooms of the Society on Friday, January 7.

Returns to the questionnaire sent out by the *Materials Handling Section* and published also in the last issue of *MECHANICAL ENGINEERING* have been coming in steadily and are being collated. This Section expects to conduct a meeting for the Metropolitan Section in Newark, N. J., some time in February.

The Organizing Committee of the *Ordinance Section* has just about completed its ballot for the Executive Committee of the Section.

The *Gas Power Section* issued a call for an organization meeting to be held in the rooms of the Society on January 21.

The *Power Section* expects to cooperate with the Philadelphia Local Section in the Symposium on Hydroelectric Development and Distribution to be held on January 21.

The *Textile Section* has been invited to hold a meeting in Providence and is also planning to hold one in Philadelphia.

AFFILIATES TO BE DEVELOPED

A Sub-Committee on Affiliate Members consisting of Robert M. Gates, George A. Orrok, James Partington and Selby Haar has been appointed to develop ways and means of interesting non-members in membership in the Sections, provision for which is made in the By-Laws. The committee will make recommendations

regarding method and form of application, design of membership card, etc.

RULES OF PROCEDURE

Several matters of procedure in the conduct of the Sections have yet to be determined, and a Sub-Committee on Rules consisting of Robert M. Gates, George A. Orrok and James Partington was appointed to make recommendations.

One of the most important matters pending is the rotation of service on the Executive Committees of the Sections. This affects the membership of the standing Committee and the Committee's representation on the Council.

A.S.M.E. Council Notes

Two meetings of the Council were held in connection with the Annual Meeting of the Society in New York. The meeting of December 7 was the last meeting of the 1920 Council and that of December 10 the first meeting of the Council for 1921.

President Miller presided at the December 7 meeting and there were present: President Fred J. Miller; Vice-Presidents Fred R. Low, R. H. Fernald, Henry B. Sargent, John A. Stevens; Managers L. E. Strothman, D. Robert Yarnall, C. L. Newcomb, C. Russ Richards, F. O. Wells, E. C. Fisher, D. S. Kimball, E. F. Scott; Past-Presidents D. S. Jacobus, Ira N. Hollis, Chas. T. Main, James Hartness, Jesse M. Smith; Chairman of Standing Committees: E. S. Carman, Local Sections; G. A. Orrok, Publications; E. B. Katte, Professional Sections; F. A. Waldron, Membership; A. M. Greene, Jr., Research; Officers-elect: E. S. Carman, President-elect, L. C. Nordmeyer; C. C. Thomas, Managers-elect; Secretary, Calvin W. Rice.

Resolutions on Death of Vice-President John R. Allen. The resolutions submitted by the committee consisting of Past-President M. E. Cooley, Prof. H. C. Anderson and Dr. O. P. Hood, were adopted.

William B. Gregory, of New Orleans, La., was appointed to fill the vacancy caused by the death of Dean Allen, as announced in the January issue of *MECHANICAL ENGINEERING* in which the report of the Special Nominating Committee was published.

Local Sections. The petition for a Tri-Cities Section to include Davenport, Iowa, and Moline and Rock Island, Illinois, was approved.

Power Test Codes. The appointment of C. Harold Berry on the Power Test Codes Individual Committee on Steam Turbines was approved, as well as that of Raymond D. Johnson on the Power Test Codes Individual Committee on Hydraulic Power Plants.

Boiler Code. The appointment of W. P. Eales on the Sub-Committee for Rules for Inspection was approved. The appointment of a representative from the National Board of Pressure Vessels Inspectors to serve on the Sub-Committee for Rules for Inspection was also approved.

Engineering Council. The decision of three of the national societies participating in the Federated American Engineering Societies to withdraw from Engineering Council necessitated the following special resolution:

WHEREAS: The American Society of Mechanical Engineers has become a Charter Member of The Federated American Engineering Societies and has appointed its representatives upon the Executive Board of The American Engineering Council which is not to take over and continue the work of Engineering Council and is prepared to contribute to its support; therefore, be it

Resolved: That the representatives of The American Society of Mechanical Engineers on the Board of Trustees of the United Engineering Society are hereby instructed to concur in an amendment to the By-Laws of the United Engineering Society which has already been proposed of terminating Engineering Council as a department of United Engineering Society.

The amendment to the By-Laws of the United Engineering Society has since been made.

John A. Holmes Association. General W. H. Bixby was appointed as the Society's representative on the Holmes Memorial Association in place of the late Dr. John A. Brashear.

Report from Mr. Yarnall. Mr. D. Robert Yarnall in retiring from the Council described the relief work of which he had had

charge in Germany and reviewed industrial conditions in that country. The Council expressed its appreciation to Mr. Yarnall for the splendid work he had done in connection with European relief.

MEETING OF DECEMBER 10

President Miller called the meeting to order and introduced the new President, Edwin S. Carman, who took the chair. There were present: Vice-Presidents Leon P. Alford, Robert B. Wolf, R. H. Fernald; Managers C. L. Newcomb, C. Russ Richards, F. O. Wells, E. C. Fisher, C. F. Scott, L. C. Nordmeyer, Henry M. Norris, C. C. Thomas; Past-Presidents Ira N. Hollis, Chas. T. Main, D. S. Jacobus; Chairman of Standing Committees; F. E. Law, Finance; E. B. Katte, Professional Sections; W. H. Kenerson, Local Sections; G. A. Orrok, Publications; Secretary, Calvin W. Rice.

Secretary. Calvin W. Rice was reappointed Secretary for the year 1921.

Executive Committee. The President nominated D. S. Jacobus, Fred J. Miller, D. S. Kimball, L. P. Alford with himself as Chairman to serve as the Executive Committee of the Council for 1921.

Standing Committee Appointments. The President announced the following appointments on the Standing Committees of Administration:

Finance Committee, THEODORE H. HINCHMAN, Detroit, Mich.

Meetings and Program Committee, L. B. McMILLAN, New York, N. Y.

Publication and Papers Committee, JOHN T. WILKIN, Connersville, Ind.

Membership Committee, F. A. WALDRON, New York, N. Y.

Constitution and By-Laws Committee, ROBERT I. CLEGG, New York, N. Y.

Foreign Relations. Past-Presidents Ambrose Swasey, W. F. M. Goss and Charles T. Main were appointed a Committee on Foreign Relations to consider invitations to meetings received from engineering societies abroad.

Finances. The Council expressed its thanks and appreciation

to the Finance Committee for its efforts to husband the finances of the Society under the present abnormal conditions. The complete report of the Committee was published in the January issue of MECHANICAL ENGINEERING.

Local Sections. The Standing Committee on Local Sections reported the election by the Society, at the Annual Business Meeting, of the Regular Nominating Committee for 1921. The personnel of this Committee was given in the January issue.

Professional Sections. The petition of members of the Society for the establishment of an Ordinance Section was approved and such a section will be formed immediately.

Student Branches. Petitions for Student Branches at the State College of Washington, Pullman, Wash., Rutgers College, New Brunswick, N. J., and Cooper Union, New York City, were approved.

Education and Training in Industry. The report on Education and Training made by the special Committee on Relations with Colleges to the Annual Meeting was referred to Engineering Foundation with the opinion that this subject might be taken up in a larger way by that body.

Appointments. D. S. Jacobus was reappointed on Engineering Foundation; Walter M. McFarland was appointed on the John Fritz Medal Board of Award; Charles F. Brush was reappointed on the Committee on Washington Award, a joint committee with the Western Society of Engineers.

John Fritz Medal Board. On the expiration of his term of service, resolutions of thanks were tendered to Walter M. McFarland for his work as the Society's representative on this Board.

National Research Council. H. deB. Parsons was appointed as the Society's representative on the new Advisory Board on Highway Research of the National Research Council. Daniel E. Moran was appointed as his alternate.

Adjournment. It was voted to adjourn to meet at the call of the Chair.

CALVIN W. RICE.
Secretary.

Conference of Local Sections at the A.S.M.E. Annual Meeting, New York, December 6-7, 1920

THE membership of the Society was better represented than ever before, at the Annual Meeting in December through the official delegates sent by the Local Sections. Out of a total of 44 cities where meetings of the Society are now being held, 38 were represented. The Local Sections and the official delegates appointed to represent each are as follows:

Akron, E. P. Roberts
Atlanta, N. C. Harrison
Baltimore, W. W. Varney
Birmingham, F. C. Cutler
Boston, Elmer Smith
Buffalo, B. S. Hughes
Chicago, Prof. H. S. Philbrick
Cincinnati, Prof. J. T. Faig
Cleveland, James H. Herron
Colorado, L. M. Gazin
Columbus, Prof. W. T. Magruder
Connecticut State, C. K. Decherd
Bridgeport,
Hartford, S. F. Jeter
Meriden,
New Haven,
Waterbury, Hugh L. Thompson
Detroit, E. S. Reid
Eastern New York, R. O. Alden
Erie, T. E. Durban
Houston,
Indianapolis, Charles Brossman
Lehigh Valley, A. T. Keller and T. E. Butterfield

Los Angeles, H. L. Doolittle
Metropolitan, L. P. Alford
Mid-Continent, D. E. Foster
Milwaukee, F. H. Dörner
Minnesota, A. J. Meyer
New Orleans, W. B. Moses
Ontario, B. Watson
Oregon,
Philadelphia, H. P. Liversidge
Pittsburgh, C. W. Bennett
Providence, James A. Hall
Rochester, F. A. Collins, Jr.
St. Louis, F. E. Bausch
San Francisco, Robert Sibley
Syracuse, L. S. Tracy
Toledo, Loring Freed
Tri-Cities, E. Ransom Jackson
Utica, Hubert E. Collins
Virginia,
Washington, D. C., G. A. Weschler
Washington State, E. O. Eastwood
Worcester, Wm. Bacon

2.00 p.m. Sections Conference called to order—Roll Call.

Remarks by Chairman of Local Sections Committee.

Outline of Regional Activities: Pacific Coast, Robert Sibley; Mid-West, Charles Brossman; South, N. C. Harrison; New England, Elmer Smith; Great Lakes, James H. Herron; Metropolitan, Leon P. Alford. Followed by open discussion.

4.00 p.m. Statement regarding relations with Student Branches, by Dr. Ira N. Hollis, followed by open discussion.

4.50 p.m. Election of Chairman and Secretary to group Local Sections for purpose of selecting Nominating Committee.

5.30 p.m. Adjournment of Delegates, and meeting of groups to select Nominating Committee.

8.00 p.m. Call to order—Roll Call.

Ten-minute Addresses by representatives of the six Standing Committees of the Society, followed by open discussion.

TUESDAY, DECEMBER 7

10.00 a.m. Call to order—Roll Call. Delegates present written reports to Chairman.

10.10 a.m. Statement regarding Budget for 1921 by F. E. Law, Vice-Chairman of Finance Committee.

10.15 a.m. Discussion of Budget of the Society for 1921.

11.00 a.m. Aims and Organization: Discussion by delegates on publicity; cooperation between Local Sections; juniors having vote; regional secretaries; desirability of student organizations affiliating with local societies, automatic election of students to membership upon graduation, etc.; increase of membership; miscellaneous.

11.45 a.m. Reports from groups and nomination of Nominating Committee.

12.15 p.m. Adjournment.

12.30 p.m. Luncheon with Council members and Past-Presidents.

President Carman, at the time of the conference chairman of the Committee on Local Sections, called the meeting to order Monday afternoon, saying in part:

This is the Sixth Convention of Local Section Delegates, and I cannot express to you in words the feeling that the officers and the staff here in

MONDAY, DECEMBER 6

10.00 a.m. Meeting of National Local Sections Committee—Delegates invited to attend.

headquarters have in having the opportunity to meet with you gentlemen from the various cities throughout the country. We doubly appreciate your coming together in the spirit of helpfulness, in your desire to attempt to help us to solve some of the difficult problems of the Society and help us to discuss and reach conclusions in the line of activities which we are most interested in, and help to build up the Society, not alone from the point of membership, but from the point of activities, that will enable us to maintain the position that we now occupy, that of being one of the greatest professional organizations in the world.

The officers of the National Society desire that each member-engineer in his community become, first of all, a citizen of the community, taking a part in community affairs and his local society first, and then become a national citizen-engineer.

There is a strong call from the engineers of the country that we give more attention to this question of service, service to others, and it seems that the whole country is ready to welcome any group of men who have the ability to suggest anything that will render some sort of a solution to the difficult problems of the day; and the most difficult of all, in my opinion, is that of industrial relations.

Major Fred J. Miller told of the important part which the engineer can and should take in the solving of the various problems connected with industrial relations. He also pointed out the desirability of Local Sections' finding a method of financing themselves, because as the number of Local Sections increases the demands for appropriations from the central body increase, so that it amounts to taking money from oneself. The revenue of the Society comes from its members, and therefore the major technical and professional activities of the Society must suffer if its funds are impaired.

Each delegate from the seven regions of the country as divided for convenience in selecting the Nominating Committee, then spoke for ten minutes outlining the development of Sections and local engineering organizations in his district. A number of excellent suggestions were brought out in these talks and these will be studied carefully by the Committee on Local Sections.

The Chairman then introduced Prof. W. H. Kenerson, of Brown University, Providence, his successor as Chairman of the Committee on Local Sections. Professor Kenerson pointed out the possibility of using the Annual Conference of Sections Delegates as a sort of House of Representatives which would act to recommend to the Council through the Committee on Local Sections, such measures as will be for the general good of the Society. The proposition confronting the Committee on Local Sections, he said, was too big and the responsibility too great for any five members of the Society to undertake without the coöperation of the Sections and their individual members by acting as their representatives in carrying to the Council the things that are desired.

The question of holding regional meetings of the Society was discussed and it was suggested that the country be divided up into districts similar to the divisions for the representatives on the Nominating Committee. Meetings could be held within those regions which would give the advantage of having joint meetings of three or four, or more, different Sections. The thought was advanced, also, that the Spring Meeting of the Society could be held alternately in these various regions, or possibly the Spring Meeting papers could be discussed at simultaneous meetings or meetings in series held in these regions.

Professor Kenerson pointed out that it was desirable to have the Local Sections in different parts of the country take the initiative in urging regional meetings, because the officers of the Society are naturally reluctant to try to force any group of members to undertake an activity which is likely to require a good deal of time and effort to insure its success.

It was announced that a regional meeting of the Atlanta, Birmingham and New Orleans Sections would be held at Mobile, Ala., on April 26, 1921, with the Committee on Local Sections as guest of honor.

The value of having each Local Section send notices of all of its meetings and other activities to every other section was pointed out. These notices when posted on the bulletin board where the meetings of the Section take place help to emphasize the size of the Society and how active its members are all over the country.

CLOSE CONNECTION WITH STUDENT BRANCHES ADVOCATED

Dr. Ira N. Hollis who has been Chairman of the Committee on Student Branches, the name of which has been changed to the Committee on Educational Training, stated that he had visited

a good many of the Student Branches throughout the country, and had come to the conclusion that these Student Branches, over fifty in number, were not close enough to the Local Sections. Continuing, he said:

The Student Branch should be part of the Local Section, not an assembly of boys organized alone and corresponding directly with the Society in New York, but a branch or part of the Local Section.

The Worcester Polytechnic Institute Student Branch of the A.S.M.E. meets every Thursday at eleven o'clock, and it is part of the curriculum that it should meet. There is no option to the student of mechanical engineering whether he shall come or not, and he comes every Thursday, either to present his own paper or to listen to somebody from the outside, particularly from the Local Sections, sometimes to listen to men who come from considerable distances.

By Student Branches being connected with the Local Sections, Dr. Hollis emphasized that he did not mean affiliated with the Local Sections, but actually in membership with the Local Section, and part of it, receiving all notices of the meetings of the Local Section and partaking of all the benefits that may come from the gain in acquaintance with the members of the Local Section, and with some better understanding of the ideas of the profession into which these young men are to go. Dr. Hollis continued as follows:

One of the things in which the Committee on Local Sections can be extremely useful to us, is in the way of producing for the Student Branch some kind of a small syllabus suggesting a program for the year. It is through that element that there is failure of the Student Branches. I asked the Board of Directors of The National Industrial Conference Board if one of their men would not make out a syllabus of interesting subjects in connection with engineering and mechanics for distribution to students all over the country, questions which are agitating engineers today, so that the student will get light on his profession before he goes out to take a part in it. That syllabus was prepared by one of the best men in the field of economics, absolutely fair, and free from any bias on the part of the employer, and still that syllabus is in the hands of the National Industrial Conference Board ready to be sent out, if we get the courage to face all sides of the employment problem.

There is another question: What can we, as a society, do for the student? A study of the question of Student Branches has suggested to us how far The American Society of Mechanical Engineers should interest itself in all kinds of education for our profession. When we come to that, we have to define engineering, not in the way that the scientists or engineers have defined it heretofore, but we must define its field. And as I have stated on previous occasions in defining this field, the first man who fashioned a flint arrowhead was just as much an engineer as the man who makes guns today, so that every man who does anything to help society on the material side belongs to our profession.

That leads logically to the conclusion that this Society should interest itself not only in colleges, but in all the corporations, in all the vocational schools, and in all the methods of training men to do the work that must be done in the fields to which our Society is directing its endeavors.

In the early part of last September we held a meeting of the representatives from about 25 different establishments, ranging all the way from the president of the Westinghouse Electrical Manufacturing Company, to the representative of the National Association of Corporation Schools, representative of the Vocational Board in Washington, and out of it came a recommendation that the second sub-committee of the Committee on Education and Training of our Society should be a sub-committee on the training of men for the industries, because after all that is what we are doing, or that is what we are assisting to do. And there we have an opportunity to influence the labor situation, not by making laws, the force of which will swing like a pendulum from one extreme to the other, but by dealing in a common-sense way with all the problems necessary to create good workmen.

The apprenticeship system is gone—the haphazard system of throwing a small boy into a foundry job and letting him find out what he can in the course of three years—and in my opinion there is no society in this country that can do more for labor than to interest itself in the training of men to do the labor of this country, especially in the training of foremen.

I think the tying together with the Student Branches of all methods of education and training is one of the great pieces of work we have to do. I asked some of the managers of the industries of the city of Worcester, not long ago at a dinner, where there were some thirty-five gentlemen present, if they would pay the money to establish a scholarship in the Worcester Polytechnic for those boys in their industries who had proved themselves more forward and most intelligent, and that group of men put up \$400,000 that night before they left the room. We have now forty such scholars in the Worcester Polytechnic Institute, under this special scholarship, sent in from among the employees of the industries to be educated further for the benefit of those industries. That experiment I think should be extended all over the country, the industrial scholarship put into the colleges, so that the best men in all the industries could have the benefit of a higher education.

I had a distinct reason, why I wanted to bring this matter before this meeting. If The American Society of Mechanical Engineers through its Committee undertakes a thoroughgoing report of the different types of education for the engineering profession, it can do that most successfully.

in my opinion, through the coöperation of the various Local Sections throughout the United States. The first thing I should advise doing, for example, would be to ask the Cleveland Section of the A.S.M.E. to make a report on all kinds of education going on in the City of Cleveland, and to make so thorough and impartial a report that anyone could make use of it, employer or employee—a report that would represent the actual facts of the case as to what is going on now.

In the discussion which followed it was the sense of the meeting that members of Student Branches should be encouraged to consider themselves as student members of the Society in the same way that a Junior, an Associate or a Member is considered a member of the organization.

SECRETARY RICE STATES HIS POLICY

Secretary Rice followed the lead of Dr. Hollis in discussing student relations. He said in part:

I am for a big, broad engineering society in every university, and for not emphasizing the branches of engineering while a student is in the university—he must think in terms of his profession, in contradistinction to the terms of mechanical or electrical or civil engineering. We must get away from the idea that a man is a kind of an engineer. He is an engineer first, he is a professional man, and these should be the thoughts in his mind all the time. I am for an all-inclusive engineering society in every college and for having them linked up with the local society in every city in the United States where there is a college.

About student membership—every student becomes a bona-fide student member of the Society when he pays his \$2 to his university organization, and his name is entered on the books of the Society and he receives from the Society its journal, *MECHANICAL ENGINEERING*, at a price less than the paper and the presswork cost the Society. He has the privilege of continuing his student membership in the Society for two years after he graduates, by paying \$2 per year.

I am in favor of doing everything we can to make it attractive for student members to become junior members of the Society, but I would strongly advise against providing too many special privileges for the young man who has already been benefited by a college education, as compared with the man who has not had that advantage.

Now, as to coöperation between the Student Branches and the Local Sections, think of the splendid feeling it would produce upon the part of the younger men if every alternate meeting of a Section was held at the university, where they would have a chance to see and to talk to the men they look up to in their profession. In this way you will provide a practical point of contact between the citizens of the town and the university.

There cannot be any doubt whatever but that we should link up our engineering activities with the universities and in the biggest and broadest way, and after we have linked them up we should jointly devote the efforts of the Society and the universities to solving the engineering problems of the day.

NOMINATING COMMITTEE FOR SOCIETY NOMINATED

Leon P. Alford was then elected chairman and Prof. H. S. Philbrick secretary of the delegates for the purpose of organizing as a preliminary body to select the members of the Nominating Committee. The meeting then adopted the following grouping of Sections, which are arranged with a view to bringing together those sections which are contiguous and at the same time, so far as is possible, equalize the number of members of the Society in each group. It is to be noted that this grouping differs from that published in Section Two of *MECHANICAL ENGINEERING* for January, p. 2, which was incorrect.

GROUP I: Boston (671), Worcester (406), Providence (169), Connecticut (658); total, 1904 members.

GROUP II: Metropolitan, 3065 members.

GROUP III: Philadelphia (1069), Lehigh Valley (146), Baltimore (169), Washington, D. C. (174), Virginia (104), Atlanta (102), Birmingham (112); total, 1876 members.

GROUP IV: Eastern New York (158), Mohawk Valley [Utica] (63), Syracuse (139), Rochester (90), Buffalo (207), Ontario (173), Erie (60), Akron (155), Cleveland (346), Pittsburgh (449), Columbus (98), Toledo (66); total, 2004 members.

GROUP V: Chicago (794), Detroit (475), Milwaukee (267), Minnesota (118), Indianapolis (181), Cincinnati (300), Tri-City (38); total, 2173 members.

GROUP VI: St. Louis (187), New Orleans (68), Houston (78), Mid-Continent (149), Colorado (116); total, 598 members.

GROUP VII: Washington State (77), Oregon (34), Los Angeles (172), San Francisco (241); total, 524 members.

A Correction

In the January issue, Section Two, page 5, in the Report of the Finance Committee, second column, under new fiscal year, the net income from *MECHANICAL ENGINEERING* was erroneously given as \$75,000. The figure should have been \$50,000. The total \$321,650 is correct.

Recent Section Meetings

ATLANTA:

January 25. Joint meeting with Atlanta Section A.S.C.E. in Carnegie Library, Atlanta, Ga. Water Power Development, by B. M. Hall, Georgia Railway & Power Co., Atlanta, Ga.

BIRMINGHAM:

December 29. The Land of Promise, as It Is Seen Today, by H. Y. Carson, former Captain U. S. A. (with General Allenby). This talk was illustrated with lantern slides.

CHICAGO:

January 24. Labor, by Messrs. Fred J. Miller and L. P. Alford.

CINCINNATI:

January 21. The Engineer and His Opportunity, and The Federated American Engineering Society—Its Organization and Object, by E. S. Carman, President A.S.M.E.

CLEVELAND:

January 4. Recent Developments and Modern Tendencies in Machine Design, by A. L. De Leeuw, 127 Water St., N. Y. C.

COLORADO:

December 29. Rubber Compounding and Tire Construction, by John G. Gates, of the Gates Rubber Co.

January 28. Industrial Expansion of Colorado, by Charles C. Gates, President of the Gates Rubber Co.

COLUMBUS:

January 14. The Story of Petroleum. Motion picture from the Bureau of Mines.

CONNECTICUT:

HARTFORD:

January 10. The Responsibility of the Coal Consumer, by C. E. Leshner, Editor of *Coal Age*, New York City.

MERIDEN:

December 21. Heating Systems, by Charles N. Flagg; Automobile Storage Battery, Norman H. Schleiter; Spark Advance, by Charles E. Stahl.

WATERBURY:

January 3. Mining Experiences of a Prospector, by Captain Harry George. Moving pictures of Byers Wrought Iron Pipe were shown.

METROPOLITAN:

January 28. Marine Electrical Engineering, Alfred E. Waller in charge of meeting.

ONTARIO:

December 17. Visit to the Central Technical High School, at which time Mr. Harry H. Angus, engineer at the school, gave a talk on engineering features of the plant and building.

PHILADELPHIA:

January 21. Symposium on Hydroelectric Power and Distribution, held under the auspices of the Engineers' Club of Philadelphia and the Philadelphia Section of the A.S.C.E., A.I.E.E. and the A.S.M.E. An account of this meeting will be given in the next issue of *MECHANICAL ENGINEERING*.

PROVIDENCE:

January 14. Mechanical Fabrics, by Professor George B. Haven, Massachusetts Institute of Technology, Cambridge, Mass. This address was illustrated with pictures and samples of work.

ST. LOUIS:

January 7. The Key Safety Hand-Hole Cap for Water-Tube Boilers, by Fred Key, of the Key Boiler Equipment Co.

SAN FRANCISCO:

December 30. Motion pictures on Refining of Copper. A short talk on the past work of the Society was also given by Dr. W. H. Durand and Robert Sibley.

TOLEDO:

December 1. Joint meeting with the Toledo Chapter of the Doherty Fraternity. Moving picture lecture on The Manufacture of Wrought Iron Pipe, by Fletcher Collins, of the A. M. Byers Co., Pittsburgh, Pa.

January 11. The Need of Business Training in Engineering, by Dr. Quillan, of Toledo University, Toledo, Ohio.

WORCESTER:

December 16. The Construction of Electrical Power Cable, by C. F. Hood. Looking Backward at the Wire Industry, by A. G. Warren. Reducing Scrap and Waste in a Wire Mill, by W. G. Hall.

PERSONALS

GERALD A. BOATE announces that he is now assistant director of technical education, Department of Technical Education, Province of Nova Scotia, and is located at the Nova Scotia Technical College, Halifax.

LUTHER A. DAVIS, formerly production superintendent of the Standard Screw Company, Corry, Pa., and more recently with the Hydraulic Pressed Steel Company, Cleveland, Ohio, is now connected with the Lamp Equipment Division of the National Lamp Works, General Electric Company, Cleveland, Ohio.

JULIUS CREDO, formerly superintendent of the Hildick Apple Juice Company, Mt. Kisco, N. Y., is now with the Louisville Drying Machinery Company, Louisville, Ky.

FRANK J. BAUMANN, formerly mechanical draftsman for The Barrett Company, Philadelphia, Pa., is now with the Tubize Artificial Silk Company of America, Hopewell, Va.

L. A. BALDWIN is now associated with the H. W. Johns-Manville Company, St. Louis, Mo. He was formerly superintendent of the Boiler Department of the Empire Gas & Fuel Co., Eldorado, Kan.

FRED. L. CRANE has left the West Penn Power Company, Pittsburgh, Pa. and is now located with the Elizabeth *Daily Journal*, of Elizabeth, N. J., as assistant to the business manager.

D. W. FRASER, formerly general manager of the Montreal Locomotive Works, Ltd., is now located in New York City. Mr. Fraser is vice-president of the American Locomotive Company.

WILLIAM ALLEN HARRIS, JR., is now a student engineer at the Deane Works of the Worthington Pump and Machinery Corporation, Holyoke, Mass.

WILLIAM HILTZ, formerly manager of the Certigraph Company, Cincinnati, is now general superintendent of construction for The Lamson Company, Boston, Mass.

WILBUR H. JUDY announces his resignation as city manager of the City of San Diego and acceptance of the position of Pacific Coast manager of the Super-Refined Metals Company of Los Angeles, Cal.

CHARLES T. OWENS, who until recently has been an inspector for the U. S. Shipping Board, New York, is now superintending engineer of the Black Diamond Steamship Company.

G. EARL MACKENZIE has left the Winchester Repeating Arms Company, New Haven, and is now with the H. W. Johns-Manville Company, New York City.

EDWARD H. RUCK, who was formerly chief engineer for The Automotive Corporation, Toledo, Ohio, is now general manager of the Mobile Tractor Company, Mobile, Ala.

DEWITT M. TAYLOR has been appointed instructor in mechanical engineering, Massachusetts Institute of Technology, Cambridge, Mass. He was formerly associate-editor of *Power*, New York, N. Y.

C. H. KESSLER, formerly senior mechanical engineer, Division of Valuation, Interstate Commerce Commission, San Francisco, Cal., is now examiner, Department of Equipment, United States Railroad Administration, Washington, D. C.

ROBERT E. LEIGH is now cost engineer for the J. G. White Engineering Corporation. He is located in Cleveland, Ohio.

PETER M. KING, formerly mechanical engineer for the General Petroleum Corporation of Vernon, Cal., is now with the Continental Mexican Petroleum Corporation, Tampico, Mexico.

J. W. McCausland announces that his business connection has been changed from the Amalgamated Machinery Corporation to the western office of the Griscom-Russell Company, Chicago.

LUCIEN BUCK, who was general manager of the Parana Paper Co., Inc., Parana, Brazil, S. A., has returned to the States and is now with the B. F. Sturtevant Company, Boston, Mass.

S. S. GARRETT has recently been advanced from assistant professor to professor of mechanical engineering, having received one of the eight professorships recently established in Cornell University in memory of students of the university who gave their lives in the world war.

VICTOR J. AZBE, consulting engineer of St. Louis, Mo., announces that he is now establishing a laboratory completely equipped for all chemical analyses and physical tests having to do with power-plant economy. This new development will make it possible to supply clients with accurate reports on many details of power-plant efficiency.

J. H. PENNINGTON, formerly with the Baltimore Copper Smelting and Rolling Co., Baltimore, is now general manager, McFarland Foundry and Machine Co., Trenton, N. J.

J. GRADY ROLLO has resigned his position with E. I. du Pont de Nemours & Co., and is now connected with the Los Angeles Gas and Electric Corporation as consulting engineer.

ALBERT R. DISMUKES has resigned his position with Joseph E. Lowes, Inc., Dayton, Ohio, and become associated with the Safe-Cabinet Company of Marietta, Ohio, in the capacity of industrial engineer.

WILLIAM R. MILLER has left the employ of the Hooven, Owens, Rentschler Company, Hamilton, Ohio, and is now with the New York Shipbuilding Corporation, Camden, N. J.

EDWARD PAYSON BULLARD, JR., president of The Bullard Machine Tool Company, Bridgeport, Conn., has been awarded the Howard N. Potts Gold Medal by the Committee on Science and the Arts of The Franklin Institute, for his invention of the Mult-Au-Matic Machine Tool.

W. R. WEBSTER has resigned his position as assistant chief engineer for the Cambria Steel Company, Johnstown, Pa., to become general engineer of the Semet-Solvay Company, of Syracuse, N. Y.

Coming Section Meetings

Atlanta.

February 23. Joint meeting with the Birmingham Section in Carnegie Library, Atlanta, Ga.

Boston.

February 8. Water-Power Development and Stand-By Stations as applied to the general subject of Power Development in New England.

Cleveland.

February 1. In the Cleveland Engineering Society Rooms. Uses of Alloy Steel in the Machine-Tool Industries, by R. R. Abbott, of the Peerless Motor Car Co.

Colorado.

February 25. At the Metropole Hotel.

Columbus.

February 11. At the Southern Hotel.

Connecticut.

Hartford Branch.

February 7. At the City Club. Industry's Supply of Energy, by George Otis Smith, Director U. S. Geological Survey.

Waterbury Branch.

February 7. At the Chase Co.'s Office Building, Waterbury, Conn.

New Orleans.

February. Joint meeting with the Louisiana Engineering Society in the Louisiana Engineering Society's Rooms.

Ontario.

February 2. Joint meeting with the Annual meeting of the Engineering Institute of Canada at the King Edward Hotel, Toronto. Effects of Corrosion on Steel Pipe and the Manufacture of Very Large Steel Pipes (up to 96 In.), by F. N. Speller, of the National Tube Co.

Philadelphia.

February 28. At Engineers' Club of Philadelphia. A Broader Field for the Engineer, by Prof. Dexter S. Kimball, consulting engineer, Ithaca, N. Y.

Toledo.

February 18. At Railway and Light Co. Auditorium. Photographing Sound Waves, by Dr. D. C. Miller, of Case School of Applied Science, Cleveland, Ohio. Stereopticon slides will accompany talk.

Utica.

February 10. At Utica Gas & Electric Co. Auditorium, 406 Lafayette St., Utica, N. Y.

A. W. K. BILLINGS, of Barcelona, Spain, is making a brief business trip in the States. Since 1912 he has been engaged in the extensive hydro-electric and other work of the Barcelona company, successively as manager of construction, managing director, vice-president and consulting engineer. During the war he was in charge of naval aviation construction in Europe and was promoted to the rank of commander and received the Legion of Honor and the Navy Cross for distinguished service in this work.

LOUIS J. EMMONS, formerly with Webster & Libby, Engineers, Portland, Me., is now employed as a designing draftsman at the U. S. Navy Yard at Portsmouth, N. H.

B. W. LATHAM has severed his connection as chief engineer with Cass Gilbert, architect, to accept a position with Murrie & Co., consulting engineers, New York.

F. K. COPELAND, president of the Sullivan Machinery Company, Chicago, Ill., has been named new national councilor of the Compressed Air Society of New York, to represent it in the Chamber of Commerce of the United States.

ELBERT CLEMENT FISHER, for the past nineteen years with Westinghouse, Church, Kerr & Company, Inc., announces that he is connected with Dwight P. Robinson & Company, Inc., with which the former company has become consolidated.

G. A. SCHNEIDER, mechanical engineer with the Standard Steel Car Company, has returned from France and is now located in Chicago.

ETHAN VIAL, editor-in-chief of the *American Machinist* and for ten years a member of their staff, has resigned to become a member of the firm of T. W. Minton & Co., Barbourville, Ky., the largest producers of hickory dimension stock in the United States. Previous to joining the staff of the *American Machinist* Mr. Vial was for three years associate editor of *Machinery*, and before that he was for fourteen years foreman and superintendent in several of the largest specialty manufacturing plants in the Middle West.

RICHARD ROBERTS, who has been employed in an engineering and executive capacity by Guggenheim Brothers and their allied interests for the past five years, has recently resigned to accept a position as sales engineer with the Wayne Oil Tank & Pump Co. at their New York district office, New York City.

JAMES T. WHITTLESEY, for the past eight years engaged in general consulting practice in California, has been appointed director of the Pacific Coast Branch of The Engineering Business Exchange recently opened in San Francisco. This will make available to the engineers and engineering industries of the Coast States the same service in bringing together the buyers and sellers of engineering and technical business properties that is being rendered by the New York office of the Exchange. Mr. Whittlesey was long a prominent figure in the street-railway field, having done some of the pioneer work in street-railway electrification on the Brooklyn street railways, and served as chief engineer of the Public Service Electric Company of New Jersey, building a number of that company's large power stations and developing a comprehensive ten-year program for the unification of the various plants and systems in New Jersey, which has since been closely followed.

JOHN B. MATTHEWS, consulting engineer and surveyor, San Francisco, is now designing the first large turbo-electric driven passenger and cargo steamer to be built on the western coast, and will have entire supervision of its construction.

LEE H. BENSON has been appointed president and general manager of The Amery Manufacturing Company of Amery, Wis., recently organized by him and other business men of Amery. The company has taken over the entire stock of the Western Machine Mfg. Co. of Eau Claire, Wis., and will manufacture the line of engines, pump jacks, wood saws, engine trucks, etc., formerly manufactured by that company.

R. LAURENCE WELDON has resigned as resident engineer for the Fort Frances Pulp & Paper Co. to become mechanical engineer for the Three Rivers Pulp & Paper Co. of Montreal.

BERKELEY WILLIAMS, until recently chief engineer of The F. H. Lawson Company, Cincinnati, Ohio, is now general manager of the Chatham Manufacturing Company, Middletown, Conn.

W. L. CHURCHILL and ALBERT McDONALD announce the formation of the McDonald-Churchill Corporation, Industrial Engineering Service, New York City. Mr. Churchill, president, was formerly engaged in consulting industrial engineering, and Mr. McDonald, vice-president and general manager, was formerly vice-president of the C. E. Knoepfel & Co., Inc., New York.

THEODORE J. NEDDERMANN, connected with the firm of Messrs. Sale & Frazar, Ltd. at their head office in Tokyo, Japan, for several years has now been transferred to the New York office, Messrs. Frazar & Co., where he will remain for the next two or three years.

NECROLOGY

JESSE WARRINGTON

Jesse Warrington, who became a member of The American Society of Mechanical Engineers in 1887, died at his home in Indianapolis, Ind., on November 25, 1920, of heart failure. He was born in Damascus, Ohio, on January 20, 1846, and was educated in the Damascus Academy and the Salem, Ohio, high school.

In his early years Mr. Warrington was employed in various works in Salem

first as wood turner and later as machinist, draftsman and designer. He left Salem in 1876 and after two years in Jackson, Mich., with E. Dennis & Co., became connected with the Nordyke & Marmion Co., Indianapolis, where he held the position of designer and mechanical superintendent until 1909, when he was physically incapacitated for business by a slight stroke of apoplexy. While with this company he made important improvements in the machinery and methods for flour production, and a recognition, which he greatly appreciated, was the unexpected receipt of a Diploma of Honorable Mention from the Columbian Exposition for this work in connection with the perfection and production of the machinery upon which his company had received an award at the Exposition.

Mr. Warrington was richly endowed with intellectual gifts, among them being an apparently intuitive knowledge of the principles of mathematics, mechanics and physics. He was the final resource for mathematicians in the several communities in which he resided when they were balked by seemingly insolvable problems.

While at Salem, Ohio, in the middle seventies, he was connected with the Buckeye Engine Co., and his was the mind behind the unusual development of that concern in the theory of steam engineering and the literature which they distributed on that subject. These circulars did much to educate the mass of engine builders, users and operators in the theory of the steam engine.

Mr. Warrington was of Quaker parentage and possessed many of the best traits of that sect. He was conscientious, generous and peace-loving to a fault. Though undoubtedly a real genius he had none of the idiosyncrasies which so frequently accompany extraordinary talent. He was moderate in all of his views, a close thinker, well informed and well read. He contributed much to the development of the past half century.

CHARLES SAMUEL BAVIER

Charles S. Bavier, for the past twenty years chief engineer of the Metropolitan Life Insurance Co. Building, New York City, died on November 27, 1920. Mr. Bavier was born in Jersey City, N. J., on March 4, 1850. He served his apprenticeship with the Oakville Engine & Foundry Co. from 1870 to 1874. He then became assistant to the Chief Engineer of Public Works, Buffalo, N. Y. From 1879 to 1886 he was connected with the following firms in the capacity of master mechanic: W. W. Goodman Meter Co., Philadelphia, Pa., American Meter Co., N. Y., J. L. & W. L. Hastings, contractors, Pittsburgh, and the Louisiana Sugar Refining Co. In 1886 he became superintendent of the latter firm and two years later took charge of the design and erection of the power plant for the New Orleans Cotton Exchange. In 1900 he became chief engineer of the Metropolitan Life Insurance Co. Building.

Mr. Bavier was the inventor of a number of mechanical appliances. He was a member of the American Society of Heating and Ventilating Engineers, the Stationary Engineers, and the Phoenix Society. He became an associate of The American Society of Mechanical Engineers in 1907.

JULIUS A. PERKINS

Julius A. Perkins, formerly mechanical director of the Universal Roller Bearing Co., died on December 7, 1920. Mr. Perkins was born in Hudson, Mich., in November, 1848. He served his apprenticeship as a machinist in Sublette, Ill., and was employed in various machine shops throughout this country and in Bremen and Berlin, Germany, thus obtaining an unusually wide and varied experience. For a number of years he held the position of inspector of manufacturing plants for several fire-insurance companies and his duties concerned all features dealing with fire losses. For sixteen years he designed and superintended the drafting and the manufacture of special machinery and parts in the development of Moffett and Perkins roller and ball bearings, of which he was the inventor.

Mr. Perkins was a veteran of the Civil War, having served in an Illinois regiment. He became a member of The American Society of Mechanical Engineers in 1911. He was also a member of the Society of Automotive Engineers.

JULIUS SHERMAN LANE

Julius S. Lane, for the past eleven years mechanical and consulting engineer with The Engineer Co., N. Y., died on November 29, 1920. Mr. Lane was born in Akron, Ohio, on November 19, 1841. He was graduated from the high school in Akron, Ohio, and then served his apprenticeship as a machinist with the Newark Machine Works, Newark, Ohio.

After his rejection for active service in the Civil War because of physical disability, he returned to Akron as master mechanic in the Taplin-Rice Machine Works. For seventeen years he was a member of the firm of Webster, Camp & Lane Machine Co., where he supervised the building of engines and mining machinery. In 1885 he made an extended trip to Europe, visiting mines in Sweden, Germany and France. Upon his return he became associated as partner and general manager with the M. C. Bullock Manufacturing Co., Chicago, manufacturers of mining machinery. In 1895 he went to South Africa to oversee the erection of machinery for the Johannesburg gold mines, and was there at the outbreak of the Boer War. In the succeeding years as consulting engineer he visited Canada, Mexico and many of the western states in connection with his mining work.

Mr. Lane became a member of The American Society of Mechanical Engineers in 1882. He was also a member of the American Institute of Mining and Metallurgical Engineers and of the Ohio Society of New York. He was a member of the New York City Public School Lecture Course and gave many lectures on the gold and diamond mines of Kimberley.

EMPLOYMENT BULLETIN

POSITIONS AVAILABLE

Stamps should be enclosed for transmittal of applications to advertisers: non-members must accompany applications with a letter of reference or introduction from a member; such reference letter will be filed with the Society's records.

ENGINEER in technical department to assist in handling problems of mechanical-engineering nature emanating from negotiations with clients establishing manufacturing operations in properties. Position will embrace various types of industrial experience along process lay-out lines. Certain amount of estimating may enter with other duties. Prefer man between thirty and thirty-five. Location Tenn. X-2.

RECENT ENGINEERING GRADUATES for developing and using new testing machines for sheet metal. Some machine-shop or machine-design experience desirable, but not essential. Candidates are especially desired with extensive training in engineering physics and mathematics; desirable personality an essential. Location Washington, D. C. X-3.

MECHANICAL ENGINEER for veneer package plant, steam power-plant operation; electrical-plant operation and maintenance; woodworking-machine maintenance; planer-saws, veneer lathe and clipper, stapling machines, tenoner nailers. Location Ga. X-4.

MECHANICAL ENGINEER, technical graduate; Protestant, as machine designer and capable of taking charge of drafting room; 3 to 5 years' experience covering textile machinery and thermodynamics preferred. Give full details of education, experience and salary desired. Location Philadelphia. X-7.

RESEARCH ENGINEER qualified in aeronautic work and particularly experienced in instrument work. Location Washington, D. C. X-9.

MANAGER for manufacturing and selling machine for labeling cans. Should like man with some practical merchandizing experience, and some substantial knowledge of production. Particularly interested in one with merchandizing ability and who knows how to develop sales and dispose of such a product. X-13.

CHIEF INSPECTOR in manufacturing establishment. It is necessary that man appointed have good organizing ability, and be experienced in inspection of machinery parts, preferably steam turbines and reduction gears. Z-2217.

MECHANICAL AND ELECTRICAL ENGINEER for work in mechanical department of mining company. Application by letter only. Location Utah. Z-2495.

INSTRUMENT MAKER experienced in precision, optical and electrical measuring instruments. Only man with experience considered. Location New York City. Z-2568.

PROSPECTIVE INDUSTRIAL ENGINEERS—graduates of Canadian Universities for manufacturing firm in Eastern Canada. Successful applicants would undergo course of intensive training for period of about six months, during which all expenses would be paid. Sound knowledge of industrial and economic principles required. Z-2572.

MECHANICAL ENGINEER familiar with design and operation of all forms of drying machinery and japanning ovens. Should have some intimate contact with this class of machinery, and especially in the construction of same. Location New York City, Philadelphia, Boston. Z-2613.

MATHEMATICIAN AND COMPUTER. Physicist preferred. Location New Jersey. Z-2620.

ASSISTANT ENGINEER for India. Duties would embrace general supervision and construction work incident to oil installations, packing plants and storage warehouses. Unmarried man of good personality, from twenty-six to thirty years of age, with good engineering education and few years of practical experience. Location New York City. Z-2623.

DRAFTSMAN. Large power company in south has openings for graduate engineers and draftsmen with experience in design of hydroelectric power plants. Give full information in first letter. Location Ala. Z-2625.

GRADUATE MECHANICAL ENGINEER WANTED, preferably with pulp and paper-mill experience for large Canadian sulphite mill. Please state age, experience, salary expected and enclose copies of references. Location Canada. Z-2627.

DRAFTSMAN, graduate mechanical engineer. Would be put on all kinds of work occurring in

refinery construction and upkeep. Prefer man with at least two or three year's experience, who is married and is in sound health. Promotion and growth will depend entirely upon man. Location Okla. Z-2634.

SUPERVISING ASSISTANT FOREMAN preferably with some technical knowledge and number of year's experience as operating foreman in large industrial plant. Must be practical. Location Newark, N. J. Z-2635.

COMPETENT DRAFTSMAN to take charge of drafting dept. One who has had practical experience, and can design machinery and structural work, systematize and get results from his department. Prefer man at least 35 years old, and one with some experience on electric elevator work if possible. Location New York State. Z-2638.

SALES ENGINEER with thorough technical and practical experience, who is familiar with machine tools and special machinery; capable of heading engineering and sales organization; directing sales development of product thoroughly acceptable to general industries. Must qualify completely as to mechanical knowledge and sales organization executive ability. Details of experience and personal description must be given. Location Ohio. Z-2639.

INSTRUCTORS (4) in mechanical engineering. Recent graduates, from February 1 to July 1, 1921 with hope and expectation of permanent employment beginning September 1, 1921. Location Ohio. Z-2647.

COMBUSTION ENGINEER. Technical graduate, two or more years experience, to take charge of tests and investigations of combustion and operating problems. Applicant to state education, training, experience and salary desired. Location Eastern Ohio. Z-2658.

INSTRUMENT AND TEST ENGINEER, recent technical graduate to take charge of instruments in industrial plant and assist on tests and investigations. Applicant to state education, training and experience. Location Eastern Ohio. Z-2659.

SALES ENGINEER. One familiar with boiler and furnace maintenance and operation, to handle line of furnace specialties in Middle West. Salary and commission. Good opportunity. Write giving experience, training, etc. Z-2664.

SALESMAN for company manufacturing aluminum ware. Commission only. Special territory will be given. Location N. Y. City. Z-2666.

MEN AVAILABLE

Only members of the Society are listed in the published notices of this section. Copy for notices should be on hand by the 5th of the month preceding date of issue and should be limited to 45 words.

CHIEF ENGINEER, experienced on cranes, derricks and hoisting machinery; now with old reliable concern, employing about 150 men; wants to change position. Age 41, married, 6 years in present position. Shop and college training. Salary \$4000. SM-5879.

MAINTENANCE ENGINEER. M.E. graduate; 5 year's experience in organization, design, construction and maintenance of industrial plants and equipment. Business experience and executive ability give me confidence that, if afforded opportunity, will acquit myself with credit, rendering efficient service. Permanent connection in responsible position desired immediately. Location immaterial. Salary \$3300. SM-5880.

EMPLOYMENT SUPERVISOR and experienced interviewer. American; age 37; practical shop and engineering experience. Minimum salary \$2400 to start. New England territory, Boston preferred. SM-5881.

MANAGER OF DESIGN. Construction and maintenance department in connection with petroleum industry. Will consider position as manager of engineering sales of oil equipment or other lines. Experienced in design of fuel-oil installations, also oil sales. SM-5882.

FOREIGN REPRESENTATIVE, mechanical-electrical engineer, age 37, American citizen speaks Spanish, Portuguese, German. Ten years selling experience in Latin America and Far East. Desires to represent American manufacturer or export firm. Unquestionable references and satisfactory reason for severing present connection. SM-5883.

MECHANICAL DRAFTSMAN and designer, age 24. Five year's experience on tool, machine maintenance and die-casting work. Desires position of responsibility with good future. Best references as to character and ability. Prefer Cleveland, Ohio

or northern Ohio vicinity. Salary \$3000. SM-5884.

MECHANICAL SUPERINTENDENT, master mechanic or similar administrative position. Vigorous man of character and ability, wide experience, thorough mechanic and proven executive. Experience covers blast furnaces, mines, railroads, water works, general construction and general shop work. SM-5885.

MECHANICAL ENGINEER, extended gas-engine and meter-manufacturing experience. Steel-mill and safety-engineering experience, chemical-apparatus layout, testing, research, calculating, designing and office work. Age 52. Salary, \$3600. SM-5886.

WORKS ENGINEER, high-grade engineer executive with ten years' experience. Capable of handling, construction and installing equipment in new plants or rearranging present plants in order to increase production. Have successfully built and equipped two plants. Available immediately. SM-5887.

SALES ENGINEER, age 23. Mechanical-engineering graduate, experienced with materials-handling machinery. Location New York City or vicinity. Salary \$2300. SM-5888.

DRAFTSMAN, specializing in plant layout; 20 years experience in machine-design and structural work. Age 40, married. Location Philadelphia. SM-5889.

WORKS MANAGER or **SUPERINTENDENT**, technical education, backed by 23 years' successful executive experience. Thorough technical and practical knowledge of up-to-date organizations. American, age 48. Practical mechanic and mechanical engineer. Especially well trained in manufacture of high precision quantity production. Served 18 months in Ordnance Department with rank of major. Good clean record. Desire to locate with progressive business, where proven ability will be recognized. SM-5890.

POWER AND CONSTRUCTION EXECUTIVE. Technical man, age 33; 12 years' experience in all phases of power-plant construction, operation and management and building construction. Desires to take full charge of this work for industrial organization. Now in charge of one of largest central-station construction jobs in this country but will be available within few months. Salary \$5000 SM-5891.

MECHANICAL engineer of executive ability. Age 26. Experience covering design and development of methods, tools, machinery and equipment for economical production. Successful organizer experienced in factory management, maintenance and general construction. Would take charge of drafting or design department. SM-5892.

MECHANICAL ENGINEER, graduate M.I.T., broad experience in taking complete charge of design, preparation of plans and specifications and construction of steam power-plant and central-heating plants, also heating and ventilating apparatus for schools, hospitals, factories and public buildings. Accustomed to interviewing architects and committees. SM-5893.

DOMESTIC AND FOREIGN SALES REPRESENTATIVE or purchasing agent. Age 37. Technical graduate; 8 years railroad operating and construction departments; 3 years field inspector of materials and equipment; 2 years chief inspector; 3 years foreign and domestic sales, buying and selling; thoroughly acquainted with export requirements. SM-5894.

WORKS ENGINEER, age 27. Technical graduate. Three years' experience on design and installation of steel-mill and chemical-plant equipment. One year operating engineer turbines and engines. Location immaterial. Can arrange New York interview. SM-5895.

REPRESENTATIVE, mechanical engineer graduate, desires representative position in Europe; 6 years' engineering experience on heavy machinery including locomotives. Very able designer. Speaks English, Polish, Russian and German. Well acquainted with European countries and customs. Educated in Germany and U. S. SM-5896.

INDUSTRIAL ENGINEERING EXECUTIVE with 17 years' practical experience, several industries. Would be interested in any major executive proposition, where an aggressive, able man could be given ample environment and attractive compensation. SM-5897.

DESIGNING or DEVELOPMENT ENGINEER, 32, technical education; 6 1/2 years' practical shop experience and 7 years design and construction on artificial-silk and other chemical machinery, pumping machinery, ordnance and railroad. Salary \$3600. Philadelphia preferred. SM-5898.

MECHANICAL ENGINEER or **EXECUTIVE**,